IMB-A160-H
IMB-A160

User Manual

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This device complies with Part 15 of the FCC Rules. Operation is subject to the following two conditions:
(1) this device may not cause harmful interference, and
(2) this device must accept any interference received, including interference that may cause undesired operation.

CALIFORNIA, USA ONLY

The Lithium battery adopted on this motherboard contains Perchlorate, a toxic substance controlled in Perchlorate Best Management Practices (BMP) regulations passed by the California Legislature. When you discard the Lithium battery in California, USA, please follow the related regulations in advance.
"Perchlorate Material-special handling may apply, see
www.dtsc.ca.gov/hazardouswaste/perchlorate"

ASRock Website: http://www.asrock.com

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1. Introduction

Thank you for purchasing ASRock ***IMB-A160-H / IMB-A160*** motherboard, a reliable motherboard produced under ASRock's consistently stringent quality control. It delivers excellent performance with robust design conforming to ASRock's commitment to quality and endurance.

In this manual, chapter 1 and 2 contains the introduction of the motherboard and step-by-step hardware installation guide. Chapter 3 and 4 contains the configuration guide of BIOS setup and information of the Support CD.

Because the motherboard specifications and the BIOS software might be updated, the content of this manual will be subject to change without notice. In case any modifications of this manual occur, the updated version will be available on ASRock's website without further notice. You may find the latest VGA cards and CPU support list on ASRock's website as well. ASRock website http://www.asrock.com

If you require technical support related to this motherboard, please visit our website for specific information about the model you are using.

www.asrock.com/support/index.asp

1.1 Package Contents

ASRock ***IMB-A160-H / IMB-A160*** Motherboard
(Mini-ITX Form Factor: 6.7-in x 6.7-in, 17.0 cm x 17.0 cm)
ASRock ***IMB-A160-H / IMB-A160*** Quick Installation Guide
ASRock ***IMB-A160-H / IMB-A160*** Support CD
2 x Serial ATA (SATA) Data Cables
1 x Serial ATA (SATA) HDD Power Cables
1 x I/O Panel Shield

1.2 Specifications

Platform	- Mini-ITX Form Factor: 6.7-in x 6.7-in, 17.0 cm x 17.0 cm - All Solid Capacitor design (100% Japan-made high quality Conductive Polymer Capacitors)
CPU	- Supports AMD Embedded G-Series APU T56N/T48E/T40E - Supports AMD Virtualization Technology
Chipset	- AMD A50M/A55E Controller Hub
Memory	- Single Channel DDR3 memory technology - 2 x 204-pin DDR3 SO-DIMM slots - T56N supports DDR3 1333/1066 MHz SDRAM, T48E/T40E supports DDR3 1066 MHz SDRAM - Max. capacity of system memory: 8GB (see **CAUTION 1**)
Expansion Slots	- 1 x PCI Express 2.0 x4 slot (PCIE1: x4 mode) - 1 x Mini-PCI Express slot (Half size)
Graphics	- AMD Radeon HD 6320 with T56N, AMD Radeon HD 6250 with T48E/T40E - Supports Pixel Shader 5.0, DirectX 11 - Max. shared memory 256MB - Three VGA Output options: D-Sub, LVDS and HDMI - Supports D-Sub with max. resolution up to 2560x 1600 @ 60Hz for T56N or 1920x1200 for T48E/T40E - Supports 2-CH/24bits LVDS with max. resolution up to 1920x1200 @ 60Hz (LVDS for IMB-A160 only.) - Supports HDMI 1.3a Technology with max. resolution up to 1920x1200 @ 60Hz (Optional)
Audio	- 2 CH Audio (Realtek ALC662 Audio Codec)
LAN	- 2 x Gigabit LAN 10/100/1000 Mb/s - Realtek RTL8111E - Supports Wake On LAN - Supports LAN Cable Detection - Supports Energy Efficient Ethernet 802.3az - Supports Dual LAN - Supports PXE

Rear Panel I/O	- 1 x PS/2 Mouse/Keyboard Port - 1 x D-Sub Port - 2 x HDMI Ports (IMB-A160 has 1 port) - 2 x Serial Ports (RS-232/422/485) - 6 x Ready-to-Use USB 2.0 Ports - 2 x RJ-45 LAN Ports with LED (ACT/LINK LED and SPEED LED) - HD Audio Jacks: Line Out / MIC In
SATA3	- 4 x SATA3 6.0 Gb/s connectors, support RAID (RAID 0, RAID 1, RAID 5 and RAID 10), NCQ, AHCI and Hot Plug (Raid is not supported by AMD A50M)
Connectors	- 4 x SATA3 6.0 Gb/s connectors - 4 x COM port headers - 1 x LVDS header (Optional) - 1 x Printer port - 1 x Mini SATA slot - 1 x TPM header - 1 x CPU Fan connector (1 x 4-pin) - 1 x Chassis Fan connector (1 x 3-pin) - 4 pin 12V power connector - SATA power connector - Front panel audio connector - 3 x USB 2.0 headers (support 6 USB 2.0 ports) - 1 x Vertical Type A USB
BIOS Feature	- 32Mb AMI UEFI Legal BIOS with GUI support - Supports “Plug and Play” - ACPI 1.1 Compliance Wake Up Events - Supports jumperfree - SMBIOS 2.3.1 Support
Support CD	- Drivers
Hardware Monitor	- CPU/Chassis Temperature Sensing - CPU/Chassis/Power Fan Tachometer - CPU/Chassis Quiet Fan - Voltage Monitoring: +12V, +5V, +3.3V, CPU Vcore
OS	- Microsoft® Windows® 8 / 8 64-bit / 7 / 7 64-bit / Vista™ / Vista™ 64-bit / XP / XP 64-bit compliant
Certifications	- FCC, CE, WHQL

* For detailed product information, please visit our website:
http://www.asrock.com

WARNING

Please realize that there is a certain risk involved with overclocking, including adjusting the setting in the BIOS, applying Untied Overclocking Technology, or using third-party overclocking tools. Overclocking may affect your system's stability, or even cause damage to the components and devices of your system. It should be done at your own risk and expense. We are not responsible for possible damage caused by overclocking.

CAUTION!

1. Due to the operating system's limitation, the actual memory size of the reservation for system usage under Windows® 32-bit operating systems may be less than 4GB. Windows® 64-bit operating systems have no such limitation. You can use ASRock XFast RAM to utilize the memory that Windows® cannot use.

1.3 Unique Features

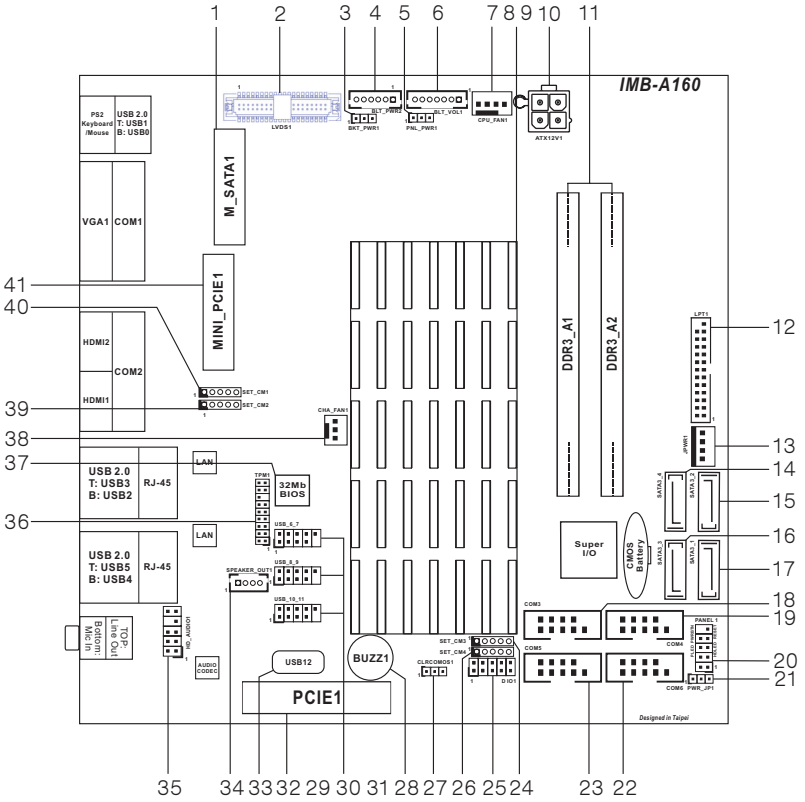
ASRock Instant Flash

ASRock Instant Flash is a BIOS flash utility embedded in Flash ROM. This convenient BIOS update tool allows you to update system BIOS without entering operating systems first like MS-DOS or Windows®. With this utility, you can press the <F6> key during the POST or the <F2> key to enter into the BIOS setup menu to access ASRock Instant Flash. Just launch this tool and save the new BIOS file to your USB flash drive, floppy disk or hard drive, then you can update your BIOS only in a few clicks without preparing an additional floppy diskette or other complicated flash utility. Please be noted that the USB flash drive or hard drive must use FAT32/16/12 file system.

ASRock Crashless BIOS

ASRock Crashless BIOS allows users to update their BIOS without fear of failing. If power loss occurs during the BIOS update process, ASRock Crashless BIOS will automatically finish the BIOS update procedure after regaining power. Please note that BIOS files need to be placed in the root directory of your USB disk. Only USB2.0 ports support this feature.

1.4 Motherboard Layout

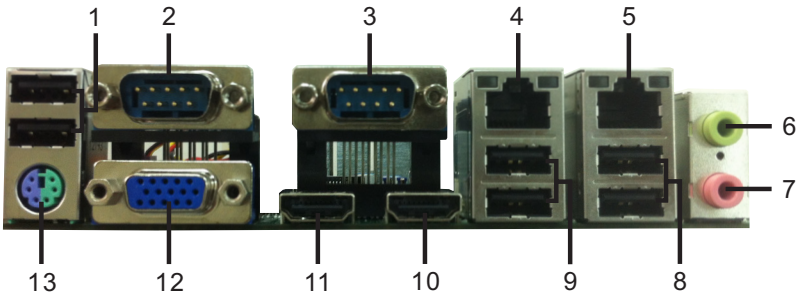


1 mini SATA Slot (M_SATA1)
2* LVDS Connector (LVDS1)
3* Backlight Power Jumper (BKT_PWR1)
4* Inverter Power Control Header (BLT_PWR2)
5* Panel Power Jumper (PNL_PWR1)
6* Backlight & Amp Volume Control Header (BLT_VOL1)
7 CPU Fan Connector (CPU_FAN1)
8 CPU
9 AMD A50M/A55E Chipset
10 4-pin ATX 12V Power Connector
11 2 x 204-pin DDR3 SO-DIMM Slots (DDR3_A1, DDR3_A2, Black)
12 Printer Port (LPT1)
13 SATA Power Connector (JPWR1)

14 SATA3 Connector (SATA3_4, White)
15 SATA3 Connector (SATA3_2, White)
16 SATA3 Connector (SATA3_3, White)
17 SATA3 Connector (SATA3_1, White)
18 COM Port Header (COM3)
19 COM Port Header (COM4)
20 System Panel Header (PANEL1)
21 PWR-On Mode Jumper (PWR_JP1)
22 COM Port Header (COM6)
23 COM Port Header (COM5)
24 COM Power Setting Jumper (SET_CM3)
25 Digital I/O Header (DIO1)
26 COM Power Setting Jumper (SET_CM4)
27 Clear CMOS Jumper (CLRCMOS1)
28 Buzzer (BUZZ1)
29 USB 2.0 Header (USB6_7)
30 USB 2.0 Header (USB8_9)
31 USB 2.0 Header (USB10_11)
32 PCI Express Slot (PCIE1)
33 Vertical Type A USB (USB12)
34 Audio AMP Output Speaker Header (SPEAKER_OUT1)
35 Front Panel Audio Header (HD_AUDIO1)
36 TPM header (TPM1)
37 SPI Flash Memory (32Mb)
38 Chassis Fan Connector (CHA_FAN1)
39 COM Power Setting Jumper (SET_CM2)
40 COM Power Setting Jumper (SET_CM1)
41 mini PCI Express Slot (MINI_PCIE1)

* LVDS for IMB-A160 only.

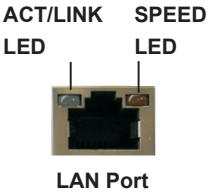
1.5 I/O Panel



1 USB 2.0 Ports (USB01)
2 Serial Port (COM1)
3 Serial Port (COM2)
***4 LAN RJ-45 Port (LAN2)**
***5 LAN RJ-45 Port (LAN1)**
6 Front Speaker (Lime)
7 Microphone (Pink)
8 USB 2.0 Ports (USB45)
9 USB 2.0 Ports (USB23)
10 HDMI Port (HDMI1)
****11 HDMI Port (HDMI2)**
12 D-Sub (VGA1)
13 PS/2 Keyboard/Mouse Port

* There are two LEDs on each LAN port. Please refer to the table below for the LAN port LED indications.

LAN Port LED Indications			
Activity/Link LED		SPEED LED	
Status	Description	Status	Description
Off	No Link	Off	10Mbps connection
Blinking	Data Activity	Orange	100Mbps connection
On	100Mbps connection	Green	1Gbps connection



** For IMB-A160-H only.

Chapter 2: Installation

This is a Mini-ITX form factor motherboard. Before you install the motherboard, study the configuration of your chassis to ensure that the motherboard fits into it.

Pre-installation Precautions

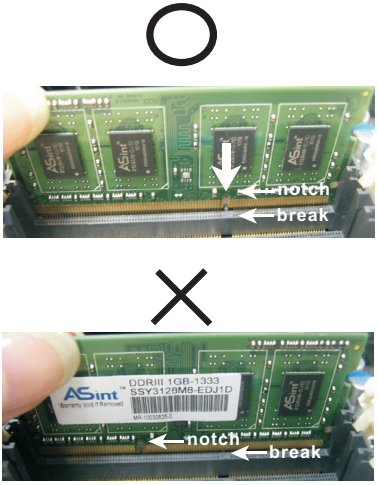
Take note of the following precautions before you install motherboard components or change any motherboard settings.

1. Make sure to unplug the power cord before installing or removing the motherboard. Failure to do so may cause physical injuries to you and damages to motherboard components.
2. In order to avoid damage from static electricity to the motherboard's components, NEVER place your motherboard directly on a carpet. Also remember to use a grounded wrist strap or touch a safety grounded object before you handle the components.
3. Hold components by the edges and do not touch the ICs.
4. Whenever you uninstall any components, place them on a grounded anti-static pad or in the bag that comes with the components.
5. When placing screws to secure the motherboard to the chassis, please do not over-tighten the screws! Doing so may damage the motherboard.

2.1 Installing Memory Modules (DIMM)

This motherboard provides two 204-pin DDR3 (Double Data Rate 3) SO-DIMM slots.

Step 1. Unlock a DIMM slot by pressing the retaining clips outward.
Step 2. Align a DIMM on the slot such that the notch on the DIMM matches the break on the slot.



The DIMM only fits in one correct orientation. It will cause permanent damage to the motherboard and the DIMM if you force the DIMM into the slot at incorrect orientation.

Step 3. Firmly insert the DIMM into the slot until the retaining clips at both ends fully snap back in place and the DIMM is properly seated.

2.2 Expansion Slots (PCI Express Slots)

There is 1 PCI Express slot and 1 mini PCI Express slot on this motherboard.

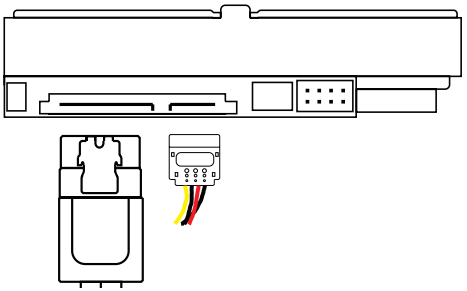
mini-PCIE Slots: mini_PCIE1 is used for mini PCIE cards.
PCIE slots: The x4 lane width PCIE1 (PCIE 2.0 x4 slot) is used for PCI Express expansion cards.

Installing an Expansion Card

Step 1. Before installing an expansion card, please make sure that the power supply is switched off or the power cord is unplugged. Please read the documentation of the expansion card and make necessary hardware settings for the card before you start the installation.
Step 2. Remove the bracket facing the slot that you intend to use. Keep the screws for later use.
Step 3. Align the card connector with the slot and press firmly until the card is completely seated on the slot.
Step 4. Fasten the card to the chassis with screws.

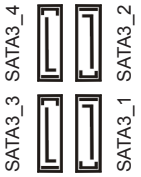
2.3 Installing SATA Hard Disks

STEP 1: Connect the SATA power cable to the hard disk.
STEP 2: Connect one end of the SATA data cable to the hard disk.



STEP 3: Connect the other end of the SATA data cable to the motherboard's SATA connectors.

Serial ATA3 Connectors
(SATA3_1: see p.10, No. 17)
(SATA3_2: see p.10, No. 15)
(SATA3_3: see p.10, No. 16)
(SATA3_4: see p.10, No. 14)



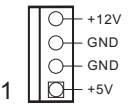
These four Serial ATA3 (SATA3) connectors support SATA data cables for internal storage devices. The current SATA3 interface allows up to 6.0 Gb/s data transfer rate.

2.4 Power Connectors

ATX 12V Power Connector
(4-pin ATX12V1)
(see p.10, No. 10)

Please connect a power supply to this connector.

SATA Power Connector
(4-pin JPWR1)
(see p.10, No. 13)



Please connect one end of the SATA power cable to the hard disk and the other end to this connector.

2.5 Installing the System Panel

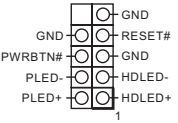
Connect the power switch, reset switch and system status indicator on the chassis to this header according to the pin assignments below. Note the positive and negative pins before connecting the cables.

PWRBTN (Power Switch):
Connect to the power switch on the chassis front panel. You may configure the way to turn off your system using the power switch.
RESET (Reset Switch):
Connect to the reset switch on the chassis front panel. Press the reset switch to restart the computer if the computer freezes and fails to perform a normal restart.
PLED (System Power LED):
Connect to the power status indicator on the chassis front panel. The LED is on when the system is operating. The LED keeps blinking when the system is in S1/S3 sleep state. The LED is off when the system is in S4 sleep state or powered off (S5).
HDLED (Hard Drive Activity LED):
Connect to the hard drive activity LED on the chassis front panel. The LED is on when the hard drive is reading or writing data.

The front panel design may differ by chassis. A front panel module mainly consists of power switch, reset switch, power LED, hard drive activity LED, speaker and etc. When connecting your chassis front panel module to this header, make sure the wire assignments and the pin assignments are matched correctly.

The white wires are negative (Connect to - or GND pins), while the colored ones are positive.

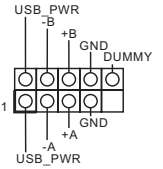
System Panel Header
(9-pin PANEL1)
(see p.10, No. 20)



2.6 Onboard Headers and Connectors

Onboard headers and connectors are NOT jumpers. Do NOT place jumper caps over these headers and connectors. Placing jumper caps over the headers and connectors will cause permanent damage to the motherboard!

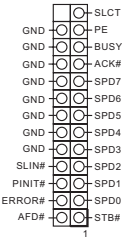
USB 2.0 Headers
(9-pin USB6_7)
(see p.10, No. 29)
(9-pin USB8_9)
(see p.10, No. 30)
(9-pin USB10_11)
(see p.10, No. 31)



(USB12)
(see p.10, No. 33)

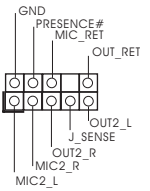
Besides six default USB 2.0 ports on the I/O panel, there are three USB 2.0 headers and one USB port on this motherboard. Each USB 2.0 header can support two USB 2.0 ports.

Print Port Header
(25-pin LPT1)
(see p.10, No. 12)



This is an interface for print port cable that allows convenient connection of printer devices.

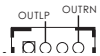
Front Panel Audio Header
(9-pin HD_AUDIO1)
(see p.10, No. 35)



This is an interface for the front panel audio cable that allows convenient connection and control of audio devices.

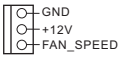
1. High Definition Audio supports Jack Sensing, but the panel wire on the chassis must support HDA to function correctly. Please follow the instructions in our manual and chassis manual to install your system.
2. If you use an AC'97 audio panel, please install it to the front panel audio header by the steps below:
   A. Connect Mic_IN (MIC) to MIC2_L.
   B. Connect Audio_R (RIN) to OUT2_R and Audio_L (LIN) to OUT2_L.
   C. Connect Ground (GND) to Ground (GND).
   D. MIC_RET and OUT_RET are for HD audio panel only. You don't need to connect them for AC'97 audio panel.
   E. To activate the front mic.
      For Windows® XP / XP 64-bit OS:
      Select "Mixer". Select "Recorder". Then click "FrontMic".
      For Windows® 8 / 8 64-bit / 7 / 7 64-bit / Vista™ / Vista™ 64-bit OS:
      Go to the "FrontMic" Tab in the Realtek Control panel. Adjust "Recording Volume".

Audio AMP Output Speaker Header
(4-pin SPEAKER_OUT1)
(see p.10, No. 34)



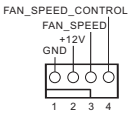
PIN	Signal Name
1	SPK L+
2	SPK L-
3	SPK R-
4	SPK R+

Chassis Fan Connector
(3-pin CHA_FAN1)
(see p.10, No. 38)



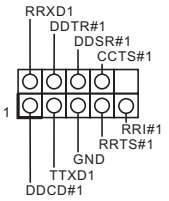
Please connect a fan cable to the fan connector and match the black wire to the ground pin.

CPU Fan Connector
(4-pin CPU_FAN1)
(see p.10, No. 7)



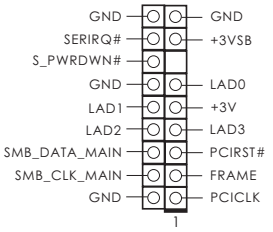
Though this motherboard provides a 4-Pin CPU fan (Quiet Fan) connector, 3-Pin CPU fans can still work successfully even without fan speed control. If you plan to connect a 3-Pin CPU fan, please connect it to Pin 1-3.

Serial Port Header
(9-pin COM3)
(see p.10, No. 18)
(9-pin COM4)
(see p.10, No. 19)
(9-pin COM5)
(see p.10, No. 23)
(9-pin COM6)
(see p.10, No. 22)



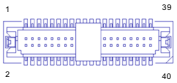
These COM headers support serial port modules.

TPM Header
(17-pin TPM1)
(see p.10, No. 36)



This connector supports Trusted Platform Module (TPM) system, which can securely store keys, digital certificates, passwords, and data. A TPM system also helps enhance network security, protects digital identities, and ensures platform integrity.

LVDS Connector
(LVDS for IMB-A160 only)
(40-pin LVDS1)
(see p.10, No. 2)



PIN	Signal Name	PIN	Signal Name
2	LVDS_PWR	1	LVDS_PWR
4	DDC CLK	3	+3V
6	LVDS1 D0(-)	5	DDC DATA
8	GND	7	LVDS1 D0(+)
10	LVDS1 D1(+)	9	LVDS1 D1(-)
12	LVDS1 D2(-)	11	GND
14	GND	13	LVDS1 D2(+)
16	LVDS1 D3(+)	15	LVDS1 D3(-)
18	LVDS1 CLK(-)	17	GND
20	GND	19	LVDS1 CLK(+)
22	LVDS2 D0(+)	21	LVDS2 D0(-)
24	LVDS2 D1(-)	23	GND
26	GND	25	LVDS2 D1(+)
28	LVDS2 D2(+)	27	LVDS2 D2(-)
30	LVDS2 D3(-)	29	LVDS PWR EN
32	GND	31	LVDS2 D3(+)
34	LVDS2 CLK(+)	33	LVDS2 CLK(-)
36	B/L ENABLE	35	GND
38	BLT_PWR	37	B/L ADJUST
40	BLT_PWR	39	BLT_PWR

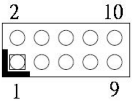
Inverter Power Control
Header (Optional)
(6-pin BLT_PWR2)
(see p.10, No. 4)

1,2: GND
3: Panel Backlight Control
4: Panel Backlight Enable
5,6: Panel Backlight Power

Backlight & Amp
Volume Control
Header (Optional)
(7-pin BLT_VOL1)
(see p.10, No. 6)

1: Volume_UP
2: Volume_DOWN
3: PANEL PWR Down
4: Panel BackLight UP
5: Panel BackLight Down
6: GND
7: GND

Digital Input / Output Pin Header
(10-pin DIO1)
(see p.10, No. 25)



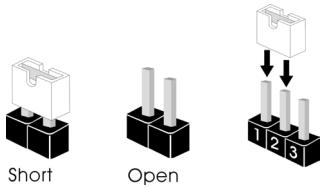
PIN	Signal Name	PIN	Signal Name
1	GP4	2	GP0
3	GP5	4	GP1
5	GP6	6	GP2
7	GP7	8	GP3
9	+5V	10	GND

mini SATA Connector
(M_SATA1)
(see p.10, No. 1)

This mini SATA connector can be used to connect a Solid-State Drive (SSD) for an internal storage device. Or used for USB interface addon cards.

2.7 Jumpers Setup

The illustration shows how jumpers are setup. When the jumper cap is placed on the pins, the jumper is “Short”. If no jumper cap is placed on the pins, the jumper is “Open”. The illustration shows a 3-pin jumper whose pin1 and pin2 are “Short” when a jumper cap is placed on these 2 pins.



Clear CMOS Jumper
(3-pin CLRCMOS1)
(see p.10, No. 27)

CLRCMOS1 allows you to clear the data in CMOS. To clear and reset the system parameters to default setup, please turn off the computer and unplug the power cord from the power supply. After waiting for 15 seconds, use a jumper cap to short pin2 and pin3 on CLRCMOS1 for 5 seconds. However, please do not clear the CMOS right after you update the BIOS. If you need to clear the CMOS when you just finish updating the BIOS, you must boot up the system first, and then shut it down before you do the clear-CMOS action. Please be noted that the password, date, time, user default profile, 1394 GUID and MAC address will be cleared only if the CMOS battery is removed.

Backlight Power Jumper
(3-pin BKT_PWR1)
(see p.10, No. 3)

1-2 : +5V
2-3 : +12V

Panel Power Jumper
(3-pin PNL_PWR1)
(see p.10, No. 5)

1-2 : +3V
2-3 : +5V

PWR-On Mode Jumper
(3-pin PWR_JP1)
(see p.10, No. 21)

1-2 : AT Mode
2-3 : ATX Mode

COM Power Setting Jumpers
(5-pin SET_CM1)
(see p.10, No. 40)
(5-pin SET_CM2)
(see p.10, No. 39)
(5-pin SET_CM3)
(see p.10, No. 24)
(5-pin SET_CM4)
(see p.10, No. 26)

1-2 : +12V
2-3 : +5V
4-5 : RRI#

2.8 Operating System Setup

This motherboard supports various Microsoft® Windows® operating systems: 8 / 8 64-bit / 7 / 7 64-bit / Vista™ / Vista™ 64-bit / XP / XP 64-bit. Because motherboard settings and hardware options vary, use the setup procedures in this chapter for general reference only. Refer your OS documentation for more information.

2.8.1 Installing Windows® 8 / 8 64-bit / 7 / 7 64-bit / Vista™ / Vista™ 64-bit / XP / XP 64-bit without RAID

Using AHCI Mode

AHCI mode is not supported under Windows® XP.

STEP 1: Set Up UEFI.
Press <F2> or <Delete> at system POST. Set **AHCI Mode** in UEFI Setup Utility > Advanced > Storage Configuration > SATA Mode.

STEP 2: Install Windows® 8 / 8 64-bit / 7 / 7 64-bit / Vista™ / Vista™ 64-bit on your system.

Using IDE Mode

STEP 1: Set Up UEFI.
Press <F2> or <Delete> at system POST. Set **IDE Mode** in UEFI Setup Utility > Advanced > Storage Configuration > SATA Mode.

STEP 2: Install Windows® 8 / 8 64-bit / 7 / 7 64-bit / Vista™ / Vista™ 64-bit / XP / XP 64-bit on your system.

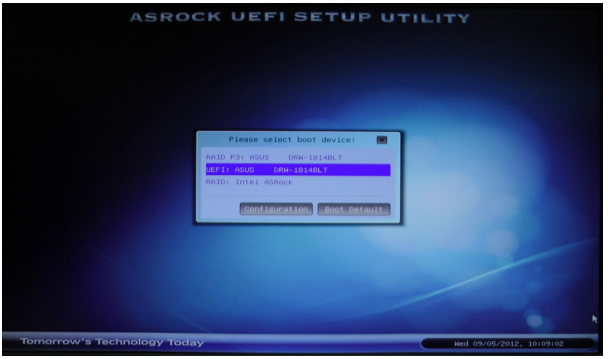
2.8.2 Installing Windows® 8 64-bit / 7 64-bit / Vista™ 64-bit on a HDD Larger than 2 terabytes (2TB) without RAID

This motherboard adopts UEFI BIOS that allows Windows® OS to be installed on a large size HDD (>2TB). Please make sure to use Windows® Vista™ 64-bit (with SP2 or above), 7 64-bit or 8 64-bit and follow the procedures below to install the operating system.

Using AHCI Mode

STEP 1: Set Up UEFI.
Press <F2> or <Delete> at system POST. Set **AHCI Mode** in UEFI Setup Utility > Advanced > Storage Configuration > SATA Mode.

STEP 2: Press <F11> to launch boot menu at system POST and choose the item "UEFI:<Optical disk drive>" to boot.



STEP 3: Start Windows® installation.

2.8.3 Installing Windows® 8 / 8 64-bit / 7 / 7 64-bit / Vista™ / Vista™ 64-bit with RAID

RAID mode is not supported under Windows® XP.

STEP 1: Set Up UEFI.

Press <F2> or <Delete> at system POST. Set **RAID Mode** in UEFI Setup Utility > Advanced > Storage Configuration > SATA Mode.

STEP 2: Use "RAID Installation Guide" to set the RAID configuration.

Before you start to configure RAID, you need to check the installation guide in the Support CD for proper configuration. Please refer to the document in the Support CD, "Guide to SATA Hard Disks Installation and RAID Configuration", which is located in the folder at the following path:
.. \ RAID Installation Guide

STEP 3: Install Windows® 8 / 8 64-bit / 7 / 7 64-bit / Vista™ / Vista™ 64-bit on your system.

2.9 Installing Drivers

The Support CD that comes with the motherboard contains necessary drivers and useful utilities that enhance the motherboard's features.

2.9.1 Running The Support CD

To begin using the support CD, insert the CD into your CD-ROM drive. The CD automatically displays the Main Menu if "AUTORUN" is enabled in your computer. If the Main Menu does not appear automatically, locate and double click on the file "ASRSETUP.EXE" in the Support CD to display the menu.

2.9.2 Drivers Menu

The drivers compatible to your system will be auto-detected and listed on the support CD driver page. Please follow the order from top to bottom to install those required drivers. Therefore, the drivers you install can work properly.

2.9.3 Utilities Menu

The Utilities Menu shows the application softwares that the motherboard supports. Click on a specific item then follow the installation wizard to install it.

2.9.4 Contact Information

If you need to contact ASRock or want to know more about ASRock, you're welcome to visit ASRock's website at http://www.asrock.com; or you may contact your dealer for further information.

2.10 Hot Plug and Hot Swap for Hard Disk Drives

This motherboard supports Hot Plug and Hot Swap for SATA3 in AHCI / RAID mode. (Raid is not supported by AMD A50M)

What is Hot Plug and Hot Swap?

If the HDDs are NOT set for RAID, it is called “Hot Plug” for the action to insert and remove the HDDs while the system is still powered on and in working condition. If the HDDs are set for RAID then it is called “Hot Swap”. However, please note that it cannot perform Hot Plug or Hot Swap if the OS has been installed into the HDD.

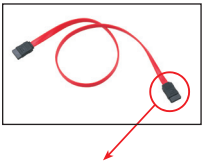
Hot Plug / Hot Swap Operation Guide

Please read the operation guide of Hot Plug / Hot Swap below carefully. Before you process Hot Plug / Hot Swap, please check the cable accessories from the motherboard gift box pack below.

A. 7-pin SATA data cable

B. SATA power cable with SATA 15-pin power connector interface

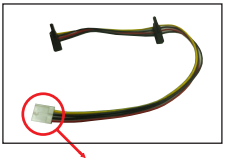
A. SATA data cable (Red)



SATA 7-pin connector

The SATA 15-pin power connector (Black) should be connected to your SATA3 HDD

B. SATA power cable



The 1x4-pin conventional power connector (White) should be connected to a power supply

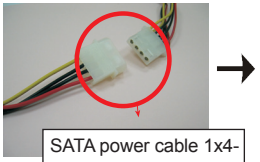
Points for attention, before you process Hot Plug / Hot Swap:

1. Without the SATA 15-pin power connector interface, Hot Plug / Hot Swap cannot be processed.
2. Even though some HDDs provide both SATA 15-pin power connectors and IDE 1x4-pin conventional power connectors, IDE 1x4-pin conventional power connector's interface is definitely unable to support Hot Plug / Hot Swap and will cause the HDD damage and data loss.
3. The operation procedure below is designed only for our motherboard which supports Hot Plug / Hot Swap.
   * Hot Plug / Hot Swap might not be supported by the chipset because of its limitation. The support information of our motherboards are indicated in the product spec on our website: www.asrock.com
4. Make sure your HDDs can support Hot Plug / Hot Swap from your dealer or HDD user manual. HDDs that do not support Hot Plug / Hot Swap will be damaged.
5. Please make sure that the required SATA drivers are installed properly. The latest SATA drivers are available on our support website: www.asrock.com
6. Make sure to use the SATA power cable & data cable from our motherboard package.
7. Please follow the instructions below step by step to reduce the risk of HDD crash or data loss.

How to Hot Plug / Hot Swap a HDD:

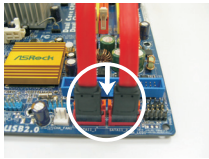
Please follow the instructions below to process Hot Plug / Hot Swap. Improper procedures will cause the HDD damage and data loss.

Step *1* Please connect the SATA power cable's 1x4-pin end (White) to the power supply's 1x4-pin cable.



SATA power cable 1x4-pin power connector (White)

Step *2* Connect the SATA data cable to the motherboard's SATA connector.



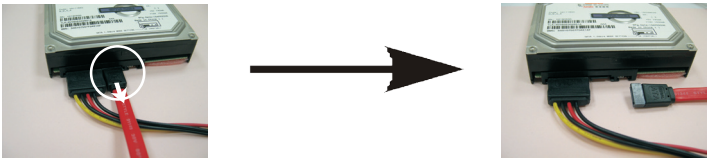
Step *3* Connect the SATA 15-pin power cable connector's (Black) end to the HDD.

Step *4* Connect the SATA data cable to the HDD.

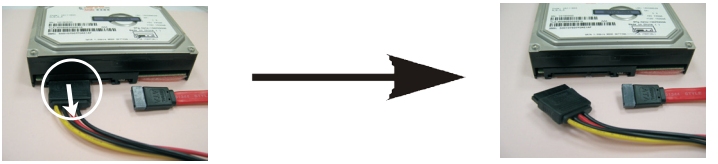
How to Hot Unplug / Hot Swap a HDD:

Please follow the instructions below to process Hot Unplug / Hot Swap. Improper procedures will cause the HDD damage and data loss.

Step *1* Unplug the SATA data cable from the HDD's side.



Step *2* Unplug the SATA 15-pin power cable connector (Black) from the HDD's side.



Chapter 3: UEFI SETUP UTILITY

3.1 Introduction

This section explains how to use the UEFI SETUP UTILITY to configure your system. The UEFI chip on the motherboard stores the UEFI SETUP UTILITY. You may run the UEFI SETUP UTILITY when you start up the computer. Please press <F2> or <Del> during the Power-On-Self-Test (POST) to enter the UEFI SETUP UTILITY, otherawise, POST will continue with its test routines.

If you wish to enter the UEFI SETUP UTILITY after POST, restart the system by pressing <Ctl> + <Alt> + <Delete>, or by pressing the reset button on the system chassis. You may also restart by turning the system off and then back on.

Because the UEFI software is constantly being updated, the following UEFI setup screens and descriptions are for reference purpose only, and they may not exactly match what you see on your screen.

3.1.1 UEFI Menu Bar

The top of the screen has a menu bar with the following selections:

Main	For setting system time/date information
Advanced	For advanced system configurations
H/W Monitor	Displays current hardware status
Boot	For configuring boot settings and boot priority
Security	For security settings
Exit	Exit the current screen or the UEFI Setup Utility

3.1.2 Navigation Keys

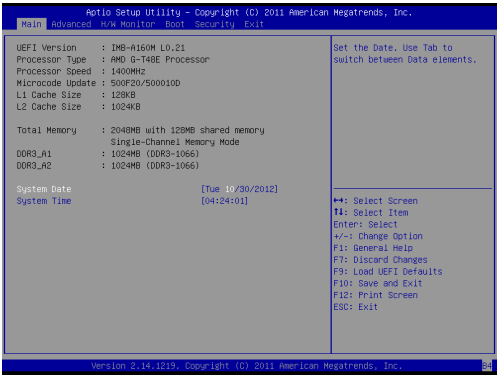
Use < ← > key or < → > key to choose among the selections on the menu bar, and use < ↑ > key or < ↓ > key to move the cursor up or down to select items, then press <Enter> to get into the sub screen. You can also use the mouse to click your required item.

Please check the following table for the descriptions of each navigation key.

Navigation Key(s)	Description
+ / -	To change option for the selected items
<F1>	To display the General Help Screen
<F7>	Discard changes and exit the SETUP UTILITY
<F9>	Load optimal default values for all the settings
<F10>	Save changes and exit the SETUP UTILITY
<F12>	Print screen
<ESC>	Jump to the Exit Screen or exit the current screen

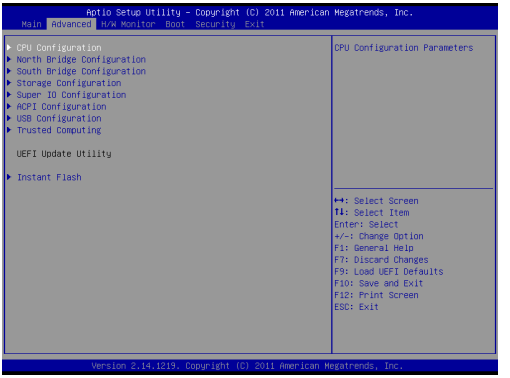
3.2 Main Screen

When you enter the UEFI SETUP UTILITY, the Main screen will appear and display the system overview.


Aptio Setup Utility – Copyright (C) 2011 American Megatrends, Inc.
Main Advanced H/W Monitor Boot Security Exit
UEFI Version : IMB-A160M L0.21
Processor Type : AMD G-T48E Processor
Processor Speed : 1400MHz
Microcode Update : 500F20/500010D
L1 Cache Size : 128KB
L2 Cache Size : 1024KB
Total Memory : 2048MB with 128MB shared memory
Single-Channel Memory Mode
DDR3_A1 : 1024MB (DDR3-1066)
DDR3_A2 : 1024MB (DDR3-1066)
System Date [Tue 10/30/2012]
System Time [04:24:01]
Set the Date. Use Tab to switch between Data elements.
↔: Select Screen
↑↓: Select Item
Enter: Select
+/-: Change Option
F1: General Help
F7: Discard Changes
F9: Load UEFI Defaults
F10: Save and Exit
F12: Print Screen
ESC: Exit
Version 2.14.1219. Copyright (C) 2011 American Megatrends, Inc.

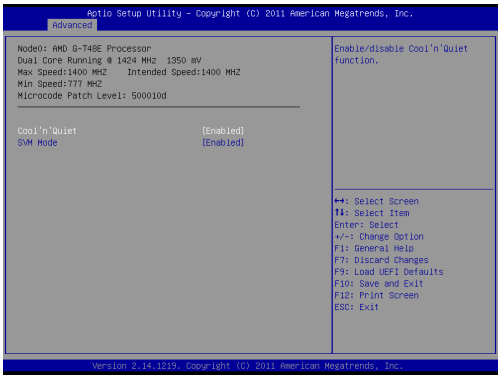
3.3 Advanced Screen

In this section, you may set the configurations for the following items: CPU Configuration, Nouth Bridge Configuration, South Bridge Configuration, Storage Configuration, Super IO Configuration, ACPI Configuration, USB Configuration and Trusted Computing.



Setting wrong values in this section may cause the system to malfunction.

3.3.1 CPU Configuration



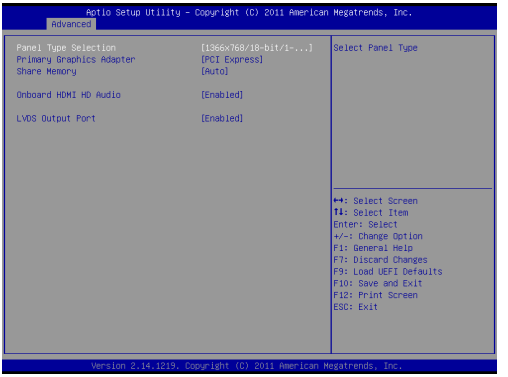
Cool 'n' Quiet

Use this to enable or disable AMD's Cool 'n' Quiet™ technology. The default value is [Enabled]. Configuration options: [Enabled] and [Disabled]. If you have installed Windows® 8 / 7 / Vista™ and want to enable this function, please set to [Enabled]. Please note that enabling this function may reduce CPU voltage and memory frequency, and lead to system stability or compatibility issues with some memory modules or power supplies. Please set this item to [Disabled] if the issues mentioned above occurs.

SVM Mode

When this is set to [Enabled], a VMM (Virtual Machine Architecture) can utilize the additional hardware capabilities provided by AMD-V. The default value is [Enabled]. Configuration options: [Enabled] and [Disabled].

3.3.2 North Bridge Configuration



Panel Type Selection

Use this to select a panel type.

Primary Graphics Adapter

This will switch the PCI Bus scanning order while searching for a video card. It allows you to select the type of Primary VGA in case of multiple video controllers. The default value is [PCI Express].

Share Memory

This allows you to configure share memory. The default value is [Auto].

Onboard HDMI HD Audio

This allows you to enable or disable the Onboard HDMI HD Audio.

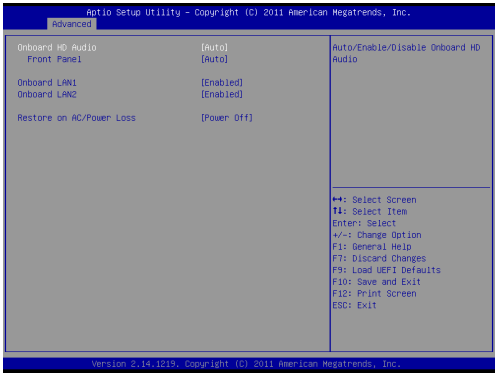
LVDS Output Port (For models with the LVDS port)

This allows you to enable or disable the Onboard LVDS.

HDMI Output Port (For models with the HDMI port)

This allows you to enable or disable the Onboard HDMI.

3.3.3 South Bridge Configuration



Onboard HD Audio

Select [Auto], [Enabled] or [Disabled] for the onboard HD Audio. If you select [Auto], the onboard HD Audio will be disabled when a PCI Sound Card is plugged.

Front Panel

Select [Auto] or [Disabled] for the onboard HD Audio Front Panel.

Onboard LAN 1

This allows you to enable or disable the Onboard LAN 1.

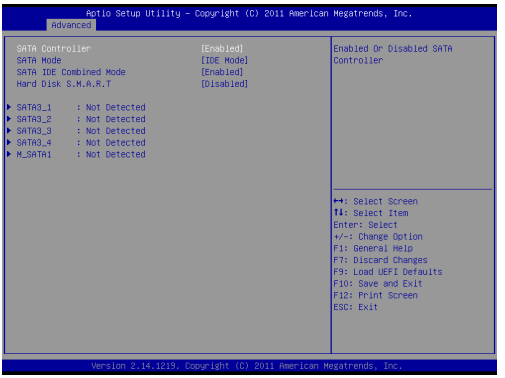
Onboard LAN 2

This allows you to enable or disable the Onboard LAN 2.

Restore on AC/Power Loss

This allows you to set the power state after an unexpected AC/power loss. If [Power Off] is selected, the AC/power remains off when the power recovers. If [Power On] is selected, the AC/power resumes and the system starts to boot up when the power recovers.

3.3.4 Storage Configuration



SATA Controller

Use this to enable or disable the SATA Controller.

SATA Mode

Use this to select the SATA mode for SATA3_1 to SATA3_4 ports. Configuration options: [IDE Mode], [AHCI Mode] and [RAID Mode]. The default value is [IDE Mode]. (Raid is not supported by AMD A50M)

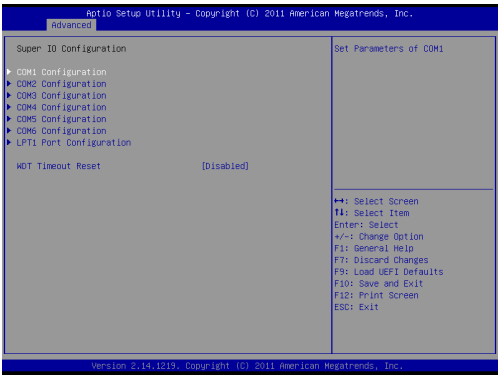
SATA IDE Combined Mode

Use this to enable or disable SATA IDE combined mode.

Hard Disk S.M.A.R.T.

Use this to enable or disable S.M.A.R.T. (Self-Monitoring, Analysis, and Reporting Technology).

3.3.5 Super IO Configuration



COM1 Configuration

Use this to set the parameters of COM1.

COM2 Configuration

Use this to set the parameters of COM2.

COM3 Configuration

Use this to set the parameters of COM3.

COM4 Configuration

Use this to set the parameters of COM4.

COM5 Configuration

Use this to set the parameters of COM5.

COM6 Configuration

Use this to set the parameters of COM6.

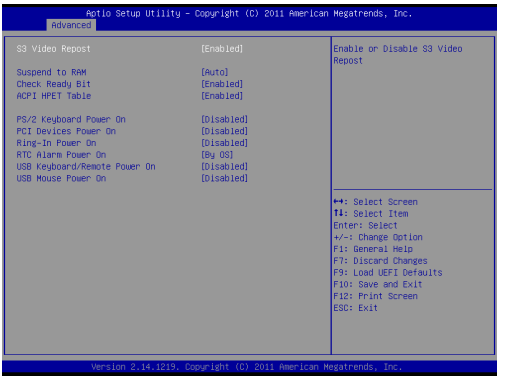
LPT1 Port Configuration

Use this to set the parameters of the onboard parallel port.

WDT Timeout Reset

This allows users to enable/disable the Watch Dog Timer timeout to reset the system. The default value is [Disabled].

3.3.6 ACPI Configuration


Aptio Setup Utility – Copyright (C) 2011 American Megatrends, Inc.
Advanced
S3 Video Repost [Enabled]
Suspend to RAM [Auto]
Check Ready Bit [Enabled]
ACPI HPET Table [Enabled]
PS/2 Keyboard Power On [Disabled]
PCI Devices Power On [Disabled]
Ring-In Power On [Disabled]
RTC Alarm Power On [By OS]
USB Keyboard/Remote Power On [Disabled]
USB Mouse Power On [Disabled]
Enable or Disable S3 Video Repost
→←: Select Screen
↑↓: Select Item
Enter: Select
+/-: Change Option
F1: General Help
F7: Discard Changes
F9: Load UEFI Defaults
F10: Save and Exit
F12: Print Screen
ESC: Exit
Version 2.14.1219. Copyright (C) 2011 American Megatrends, Inc.

S3 Video Repost

Use this to enable/disable S3 Video Repost. The default value is [Enabled].

Suspend to RAM

Use this to select whether to auto-detect or disable Suspend-to-RAM. Select [Auto] to enable if the OS supports it.

Check Ready Bit

Use this to enable or disable Check Ready Bit.

ACPI HPET Table

Use this to enable or disable the ACPI HPET Table. The default value is [Enabled]. Please set this option to [Enabled] if you plan to use this motherboard to submit Windows® Vista™ certification.

PS/2 Keyboard Power On

Use this to enable or disable the PS/2 keyboard to turn on the system from power-soft-off mode.

PCI Devices Power On

Use this to enable or disable the PCI devices to turn on the system from power-soft-off mode.

Ring-In Power On

Use this to enable or disable the Ring-In signals to turn on the system from power-soft-off mode.

RTC Alarm Power On

Use this to enable or disable the RTC (Real Time Clock) to power on the system.

USB Keyboard/Remote Power On

Use this to enable or disable the USB Keyboard/Remote to power on the system.

USB Mouse Power On

Use this to enable or disable the USB Mouse to power on the system.

3.3.7 USB Configuration

Aptio Setup Utility – Copyright (C) 2011 American Megatrends, Inc.
Advanced
USB 2.0 Controller [Enabled]
Legacy USB Support [Enabled]
To enable or disable USB 2.0 Controller.
↔: Select Screen
↑↓: Select Item
Enter: Select
+/-: Change Option
F1: General Help
F7: Discard Changes
F9: Load UEFI Defaults
F10: Save and Exit
F12: Print Screen
ESC: Exit
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USB 2.0 Controller

Use this to enable or disable the USB 2.0 controller.

Legacy USB Support

Use this to select legacy support for USB devices. There are four configuration options: [Enabled], [Auto], [Disabled] and [UEFI Setup Only]. The default value is [Enabled]. Please refer to the descriptions below for details of these four options:

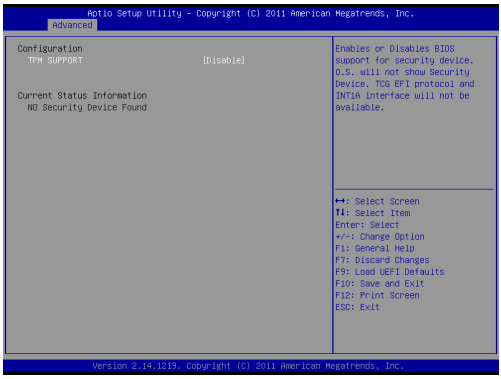
[Enabled] - Enables support for legacy USB.

[Auto] - Enables legacy support if USB devices are connected.

[Disabled] - USB devices are not allowed to be used under legacy OS and UEFI setup when [Disabled] is selected. If you have USB compatibility issues, it is recommended to select [Disabled] to enter the OS.

[UEFI Setup Only] - USB devices are allowed to be used only under UEFI setup and Windows / Linux OS.

3.3.8 Trusted Computing


Aptio Setup Utility – Copyright (C) 2011 American Megatrends, Inc.
Advanced
Configuration
TPM SUPPORT [Disable]
Current Status Information
NO Security Device Found
Enables or Disables BIOS support for security device. O.S. will not show Security Device. TCG EFI protocol and INT1A interface will not be available.
↔: Select Screen
↑↓: Select Item
Enter: Select
+/-: Change Option
F1: General Help
F7: Discard Changes
F9: Load UEFI Defaults
F10: Save and Exit
F12: Print Screen
ESC: Exit
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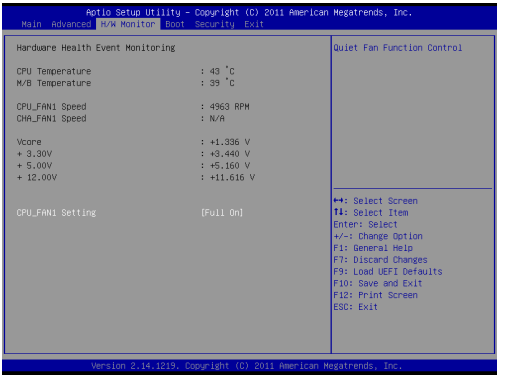
TPM Support

Use this to enable or disable BIOS support for security devices. The default is [Disabled].

3.4 Hardware Health Event Monitoring Screen

This section allows you to monitor the status of the hardware on your system, including the parameters of the CPU temperature, motherboard temperature, fan speed and voltage.


Aptio Setup Utility – Copyright (C) 2011 American Megatrends, Inc.
Main Advanced H/W Monitor Boot Security Exit
Hardware Health Event Monitoring
CPU Temperature : 43 °C
M/B Temperature : 39 °C
CPU_FAN1 Speed : 4963 RPM
CHA_FAN1 Speed : N/A
Vcore : +1.336 V
+ 3.30V : +3.440 V
+ 5.00V : +5.160 V
+ 12.00V : +11.616 V
CPU_FAN1 Setting [Full On]
Quiet Fan Function Control
↔: Select Screen
↑↓: Select Item
Enter: Select
+/-: Change Option
F1: General Help
F7: Discard Changes
F9: Load UEFI Defaults
F10: Save and Exit
F12: Print Screen
ESC: Exit
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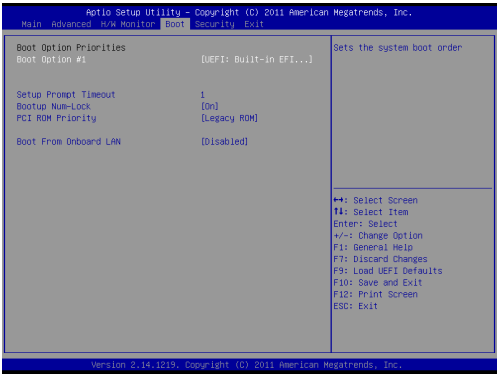
CPU FAN1 Setting

This allows you to set CPU FAN1's speed. Configuration options: [Full On] and [Automatic Mode]. The default value is [Full On].

3.5 Boot Screen

This section displays the available devices on your system for you to configure the boot settings and the boot priority.



Setup Prompt Timeout

This shows the number of seconds to wait for the setup activation key.

Bootup Num-Lock

If this is set to [On], it will automatically activate the Numeric Lock after boot-up.

PCI ROM Priority

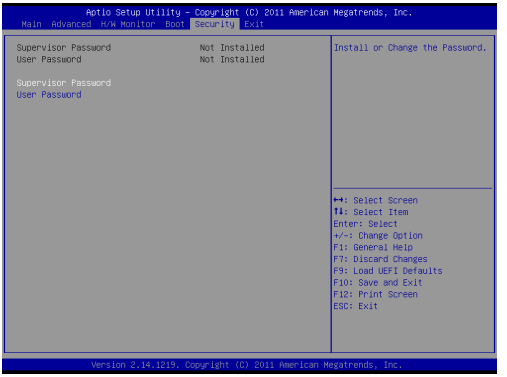
Use this item to adjust PCI ROM Priority. The default value is [Legacy ROM].

Boot From Onboard LAN

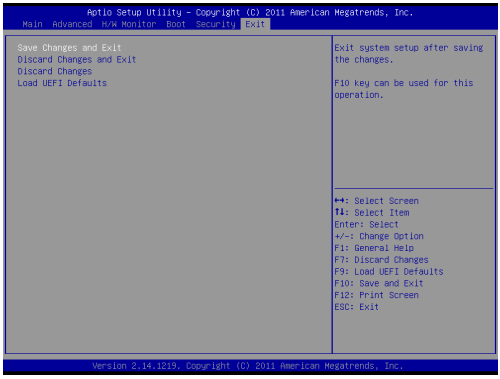
Use this to enable or disable Boot From Onboard LAN.

3.6 Security Screen

In this section you may set or change the supervisor/user password for the system. You may also clear the user password.


Aptio Setup Utility – Copyright (C) 2011 American Megatrends, Inc.
Main Advanced H/W Monitor Boot Security Exit
Supervisor Password Not Installed
User Password Not Installed
Supervisor Password
User Password
Install or Change the Password.
↔: Select Screen
↑↓: Select Item
Enter: Select
+/-: Change Option
F1: General Help
F7: Discard Changes
F9: Load UEFI Defaults
F10: Save and Exit
F12: Print Screen
ESC: Exit
Version 2.14.1219. Copyright (C) 2011 American Megatrends, Inc.

3.7 Exit Screen


Aptio Setup Utility – Copyright (C) 2011 American Megatrends, Inc.
Main Advanced H/W Monitor Boot Security Exit
Save Changes and Exit
Discard Changes and Exit
Discard Changes
Load UEFI Defaults
Exit system setup after saving the changes.
F10 key can be used for this operation.
↔: Select Screen
↑↓: Select Item
Enter: Select
+/-: Change Option
F1: General Help
F7: Discard Changes
F9: Load UEFI Defaults
F10: Save and Exit
F12: Print Screen
ESC: Exit
Version 2.14.1219. Copyright (C) 2011 American Megatrends, Inc.

Save Changes and Exit

When you select this option the following message, “Save configuration changes and exit setup?” will pop out. Select [OK] to save changes and exit the UEFI SETUP UTILITY.

Discard Changes and Exit

When you select this option the following message, “Discard changes and exit setup?” will pop out. Select [OK] to exit the UEFI SETUP UTILITY without saving any changes.

Discard Changes

When you select this option the following message, “Discard changes?” will pop out. Select [OK] to discard all changes.

Load UEFI Defaults

Load UEFI default values for all options. The F9 key can be used for this operation.